Validation period:_____

MRSA VRE Validation – Form C

MRSA and VRE BSI Validation Findings

Display validation results using 2x2 tables to demonstrate both the accuracy and completeness of CDI surveillance and reporting.

MRSA BSI Example

MRSA positive blood cultures reviewed for validation = 22		Validation Review ("Gold Standard" or truth)	
		MRSA BSI	Not MRSA BSI
Identified and Reported by Hospital	MRSA BSI 12	12	**0** Reported in error
	Not MRSA BSI 10	**3** Missed	7

Positive Predictive Value (PPV) =

$$\frac{12 \text{ True positives}}{12 \text{ True pos.} + 0 \text{ False pos.}} \times 100$$

100%

Sensitivity =

$$\frac{12 \text{ True positives}}{12 \text{ True pos.} + 3 \text{ False neg.}} \times 100$$

80%

Specificity =

$$\frac{7 \text{ True negatives}}{7 \text{ True neg.} + 0 \text{ False pos.}} \times 100$$

100%

Interpretation:

From the 22 MRSA positive blood cultures reviewed, the validation reviewers found **3** disparities compared to the hospital surveillance report.

The hospital had identified and reported 12 MRSA BSI. The validation reviewers determined all 12 should have been reported; all met the surveillance criteria.

The calculated **positive predictive value (PPV)** reveals that what was reported as MRSA BSI meets the LabID criteria 100% of the time.

For the other 10 MRSA positive blood cultures reviewed in which routine hospital surveillance did not report MRSA BSI, the validation reviewers identified **3** additional MRSA BSI.

The calculated **sensitivity** reveals routine hospital surveillance is identifying 80% of the MRSA BSI occurring.

The calculated **specificity** reveals hospital routine surveillance accurately "rules out" MRSA BSI 100% of the time.

VRE BSI Example

VRE positive blood cultures reviewed for validation = 6		Validation Review ("Gold Standard" or truth)	
		MRSA BSI	Not MRSA BSI
Identified and Reported by Hospital	VRE BSI 0	---	**---** Reported in error
	Not VRE BSI 6	**3** Missed	3

Positive Predictive Value (PPV) =

$$\frac{0 \text{ True positives}}{0 \text{ True pos. + n/a False pos.}} \times 100$$

Could not calculate

Sensitivity =

$$\frac{0 \text{ True positives}}{0 \text{ True pos. + 3 False neg.}} \times 100$$

0%

Specificity =

$$\frac{3 \text{ True negatives}}{3 \text{ True neg. + 0 False pos.}} \times 100$$

100%

Interpretation:

From the 6 VRE positive blood cultures reviewed, the validation reviewers found **3** disparities compared to the hospital surveillance report.

The hospital had not identified nor reported any VRE BSI. The validation reviewers determined 3 should have been reported (the other 3 were duplicates).

Positive predictive value (PPV) could not be calculated because the hospital had not identified any VRE BSI upon which to assess accuracy in applying surveillance definitions.

For the 6 VRE positive blood cultures reviewed that the hospital did not report as VRE BSI, the validation reviewers identified **3** VRE BSI that met the surveillance criteria.

The calculated **sensitivity** reveals routine hospital surveillance is identifying 0% of the VRE BSI occurring.

The calculated **specificity** reveals that when VRE BSI did not meet criteria, routine surveillance is not reporting them 100% of the time (i.e. hospital not calling something a VRE BSI that is not a VRE BSI).

Data Validation for MRSA Bloodstream Infections

Hospital: _____

Surveillance time period: _____

From MRSA Events Table, Form 3

Number of MRSA+ blood cultures in review = _____

		Validation Review	
		MRSA BSI	**No MRSA BSI**
Identified and Reported by Hospital	**MRSA BSI** ____ ***Form B, M total Q1 = Yes***	**A**	**B** ***Reported in Error***
	No MRSA BSI ____ ***Form B, M total Q1 = No***	**C** ***Missed***	**D**

Sensitivity = $\frac{A}{A + C}$ X 100 = _____

Specificity = $\frac{D}{D + B}$ X 100 = _____

Positive Predictive Value = $\frac{A}{A + B}$ X 100 = _____

Data Validation for VRE Bloodstream Infections

Hospital: _____

Surveillance time period: _____

From VRE Events Table, Form 3

Number of VRE+ blood cultures in review = _____

		Validation Review	
		VRE BSI	**No VRE BSI**
Routine Hospital Surveillance	**VRE BSI ____** *Form B, V total Q1 = Yes*	**A**	**B** *Reported in Error*
	No VRE BSI ____ *Form B, V total Q1 = No*	**C** *Missed*	**D**

Sensitivity = $\frac{A}{A + C}$ X 100 = _____

Specificity = $\frac{D}{D + B}$ X 100 = _____

Positive Predictive Value = $\frac{A}{A + B}$ X 100 = _____